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U.S. Department
of Transportation

**Federal Aviation
Administration**

U.S. Department of Transportation

Federal Aviation Administration

Standard Practice

ABBREVIATIONS FOR THE TECHNICAL OPERATIONS ENVIRONMENT

FOREWORD

1. This standard is approved for use by all Departments of the Federal Aviation Administration (FAA).

2. This standard covers the format and content requirements for developing and using FAA Technical Operations abbreviations.

3. This standard specifies requirements that must be adhered to in the development of new abbreviations or use of authorized abbreviations.

4. This standard has been prepared in accordance with FAA-STD-068 U.S Department of Transportation Federal Aviation Administration, *Preparation of Standards (Dec*ember 2009).

5. Comments, suggestions, or questions on this document should be addressed to:

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1 SCOPE

1.1 Scope

This standard covers the format and content requirements for developing and using abbreviations in the FAA Technical Operations environment.

1.2 Purpose

The purpose of this standard is to promote consistent use of abbreviations on Technical Operations hardware and software. This standard—

a. Prescribes the use of authorized abbreviations.

b. Prescribes guidelines for creating new abbreviations.

1.3 Applicability

This standard applies to the use of abbreviations on permanent markings, labels, and electronic displays associated with Technical Operations hardware and software.

2 APPLICABLE DOCUMENTS

2.1 General

The documents listed in this section are specified in sections 4 or 5 of this standard. This section does not include documents cited in other sections of this standard or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 4 or 5 of this standard, whether or not they are listed.

2.2 Government documents

2.2.1 Specifications, standards, and handbooks

The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

2.2.1.1 STANDARDS

None

2.2.1.2 SPECIFICATIONS

None

2.2.1.3 UNITED STATES GOVERNMENT PRINTING OFFICE

United States Government Printing Office (GPO) Style Manual

(Copies of this document are available online from the U.S. Government Printing Office at www.access.gpo.gov.)

2.3 Non-Government publications

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 260.1 - Standard Letter Symbols for Units of Measurement (SI Units, Customary Inch-Pound Units, and Certain Other Units)

(Copies of this document are available online at www.ieee.org.)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.38 - Abbreviations and Acronyms for Use on Drawings and Related Documents

(Copies of this document are available online at www.asme.org.)

2.4 Order of precedence

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3 DEFINITIONS

3.1 Terms and definitions

3.1.1 Abbreviation. An abbreviation is a shortened version of a word or group of words formed by omitting one or more letters.

3.1.2 Acronym. An acronym is a word formed from the initial letter or letters of a group of words. Acronyms are pronounced as words. For example, graphical user interface is pronounced as “GUI”, not “G-U-I”. All acronyms are abbreviations, but not all abbreviations are acronyms.

3.1.3 Clippings. (Also known as "truncation" or "shortening"). A clipping is formed from removing vowels and/or consonants from the beginning and/or ending of a word. For example, cable (cablegram) or phone (telephone). Clippings are a form of abbreviations.

3.1.4 Contraction. A contraction is formed by omitting one or more vowels or consonants in a word or phrase to maintain a flowing sound. The result may be a new word as in don't (formed from "do not") or what's (formed from "what is"). Contractions are a form of abbreviations.

3.1.5 Initialism. An initialism is formed from initials and pronounced as a series of letters. For example, the initialism ILS is formed from the initials of instrument landing system. Every initialism is an abbreviation but not every abbreviation is an initialism. Initialisms are not pronounced as words but are spelled out. For example the abbreviation for ante meridiem is pronounced “A-M”, not “AM”.

3.1.6 Phonetic sound. Alphabetic use of vowels and consonants that mimic the sound produced when pronouncing the abbreviated word or phrase.

3.2 Key words

3.2.1 Shall. The key word "shall" is used to denote required action (requirement language). The word "should" is used to denote a best practice (guidance language).

3.2.2 Abbreviations. This standard uses the term "abbreviation" as a collective term for acronyms, initialisms, contractions, and clippings.

3.3 Abbreviations used in this document

ASME	American Society of Mechanical Engineers
FAA	Federal Aviation Administration
GPO	Government Printing Office
IEEE	Institute of Electrical and Electronics Engineers

4 GENERAL REQUIREMENTS

This section prescribes requirements and design criteria for Technical Operations abbreviations.

4.1 General

The following general design rules shall apply to Technical Operations abbreviations:

a. Word(s) or phrases should be fully spelled out when possible.

b. Abbreviations should be avoided in feedback messages on electronic displays.

c. Abbreviations should be used only when space is limited and the word(s) cannot be spelled out.

d. Use of abbreviations and definitions shall be in accordance with the Appendix.

e. Use of abbreviations and definitions not found in the Appendix shall be in accordance with ASME Y14.38 or GPO Style Manual.

f. New abbreviations shall be developed using the requirements contained herein.

4.2 Clarity and distinctness

The following clarity and distinctness rules shall apply to Technical Operations abbreviations:

a. When the abbreviation of a word is not clear or may be misinterpreted, the entire word shall be used.

b. The definitions for all abbreviations used should be available to the user.

c. The same abbreviation shall not be used to identify two or more displays, controls, or panels when these are not functionally identical.

4.3 Technical documentation

The following technical documentation rules shall apply to Technical Operations abbreviations:

a. The first time an abbreviation is used in text, it shall be placed in parentheses and shall be preceded by the word or term spelled out in full. For example, circuit (CKT) and frequency converter (FREQ CONV). This provision does not apply to:

(1) Abbreviations used for the first time in tables, figures, or equations.

(2) Abbreviations for points of the compass.

(3) Standard abbreviations for geographical locations.

(4) Standard dictionary abbreviations.

(5) Abbreviations for types of weather phenomena used by aerologists and meteorologists.

(6) Abbreviations of commonly used international metric terms.

b. Abbreviations used on figures and in tables, but not defined in the text or in any other portion of the text, shall be spelled out in a footnote to the applicable figure or table.

c. Abbreviations in technical documentation shall be identical to abbreviations on hardware and software in terms of spelling, letter case, and character spacing.

4.4 Consistency

The following consistency rules shall apply to Technical Operations abbreviations:

a. Words shall have only one consistent abbreviation. For example, “clear” shall only be abbreviated as CLR.

b. Abbreviations should have only one consistent definition. For example, CLR should only mean “clear”, not “clearance”.

c. The same abbreviations shall be used for all tenses, participle endings, the possessive case, the singular and plural, and the noun and modifying forms of a term. For example, LVL shall be used for level and levels; INHB for inhibit, inhibited, and inhibiting.

4.5 Punctuation marks

a. Punctuation marks shall not be used with abbreviations unless—

(1) Specified herein.

(2) Confusion or misinterpretation of the abbreviation would occur.

(3) When it ends a sentence.

b. The punctuation of units of measurement shall conform to IEEE Standard 260.1 and to the GPO Style Manual

4.6 General typography

4.6.1 Subscript and superscript. Abbreviations should not contain subscripts and superscripts.

4.6.2 Capitalization. Capital letters shall be used for abbreviations unless convention prescribes the use of lower case letters. For example, the GPO Style Manual prescribes to abbreviate alternating current as "ac", not "AC".

4.6.3 Plus/minus sign. A plus or minus sign may substitute the words "plus" or "minus" unless confusion or misinterpretation would occur from the omission of the abbreviated words. For

example, a plus sign may substitute the word "plus" in Dynamic Ocean Track System Plus (DOTS+).

4.7 Separating characters

4.7.1 Spacing. The following spacing rules shall apply to Technical Operations abbreviations:

a. Spaces shall not be inserted within an abbreviation. For example, the word “automatic dependent surveillance” shall be abbreviated as “ADS”, not “A D S”.

b. A minimum of one blank space shall be used to separate blocks of abbreviations. For example, the word "operational baseline" shall be separated as "OP BS".

c. A minimum of one blank space shall be used between a number and its unit. For example, a blank space shall separate 35 and millimeter (35 mm) or 250 and gigahertz (250 GHz).

4.7.2 Hyphen. A hyphen shall be used to separate an abbreviation and a unit designator. For example, PCU-A and PCU-B shall be used instead of PCUA and PCUB to represent Power Conditioning Units A and B.

4.8 Numbers

An abbreviation may include letter and number combination to indicate repetition or pronunciation unless confusion may result from the use of number-letter combination. For example, the number three and the letter “I” may be confused for the number “thirty-one” in Pre-Planned Product Improvement (P3I).

4.9 Prepositions, conjunctions, and articles

The following prepositions, conjunctions, and articles rules shall apply for Technical Operations abbreviations:

a. Prepositions, conjunctions, and articles shall be omitted when forming abbreviations.

b. The hyphen, slant, or ampersand may be substituted for prepositions, conjunctions, and articles. For example, MON-FRI for Monday through Friday; A/G for air to ground; OT&E for operational test and evaluation.

4.10 Word combinations

Authorized abbreviations of word combinations or grouping, as specified in the Appendix, shall be used as such and shall not be separated for use singularly. For example, the word combination A/A means “air-to-air” but the letter A shall not be used singularly to mean “air”. Single word abbreviations may be combined to form abbreviations for new word combinations that are not listed in the Appendix provided there is no possibility of misinterpretation and the new abbreviation does not form an authorized word combination with a different meaning. For

example, the abbreviation for “battery” and the abbreviation for “alarm” may be combined to form the word combination “BATT ALM.”

5 DETAILED REQUIREMENTS

5.1 Requirements for developing new abbreviations

The process, as specified herein, shall be adhered to when developing a new abbreviation to be considered for inclusion in Technical Operations hardware and software. Verify that—

a. The to-be-abbreviated word does not exist in the Appendix, ASME Y14.38, or GPO Style Manual.

b. The proposed abbreviation does not exist in the Appendix, ASME Y14.38, or GPO Style Manual.

c. The phonetic sound or alphabetic similarity of the word is minimally affected.

d. Where the word(s) cannot be abbreviated with phonetic retention, an abbreviation that is no longer than is necessary to ensure a clear and unambiguous meaning should be used.

e. The selection of letters to be omitted ensures a difference with existing words or other abbreviations appearing on the specific or adjacent displays, controls, and panels.

5.2 Requirements for implementing new abbreviations

The process, as specified herein, shall be adhered to prior to implementing a new abbreviation.

a. Proposed abbreviation shall be submitted to Technical Operations Human Factors for approval.

b. Technical Operations Human Factors approval shall be granted before implementing a new abbreviation.

5.3 List of authorized abbreviations

The list of approved abbreviations in the Appendix shall be used on Technical Operations hardware and software.

6 NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use

Requirements and design criteria covered by this standard are intended for use in acquisition of Technical Operations hardware and software.

6.2 Exclusions

This document does not—

a. Include non-Technical Operations abbreviations defined or established in other standards such as those for scientific notations, units of measurement, mathematical terms, organization names, power distribution units, or units of time. However, an exception is made for those abbreviations that have widespread use and recognition in Technical Operations, for example, MAX for maximum.

b. Include visibility and legibility guidelines to include contrast, height, width, spacing and style of letters.

c. Prescribe method of application to include carving and location of letters.

d. Prescribe retrofitting fielded Technical Operations hardware and software.

e. Apply to technical documentation to include technical instruction manuals, maintenance manuals, and training documentation, except as prescribed in section 4.3.

f. Include abbreviations unique to a specific Technical Operations hardware and software.

APPENDIX. LIST OF AUTHORIZED TECHNICAL OPERATIONS ABBREVIATIONS

The abbreviations contained herein are authorized for use on Technical Operations hardware and software. Single words may be combined when necessary if there is no abbreviation listed for the combination. For example, the abbreviation for “battery” and the abbreviation for “alarm” may be combined to form the word combination “BATT ALM.” Authorized word combinations shall be used as such and shall not be separated for use singularly. For example, the word combination “air-to-air” is abbreviated as “A/A” but the letter A shall not be used singularly to mean “air”.

A

ACD	ARTS Color Display
ACFT	Aircraft
ACK	Acknowledge
ACP	Azimuth Change Pulse
A/D	Analog to Digital
ADAC	Analog Digital Analog Converter
ADJ	Adjustment
ADT	ATCRBS Decoder and Timing
A/G	Air to Ground
AGC	Automatic Gain Control
AGR	Automatic Gain Reduction
AIG	Application Interface Gateway
ALM	Alarm
AMP	Amplifier
AMUX	Analog Multiplexer
ANT	Antenna
APPL	Application
ARIES	Aircraft Reply and Interference Environment Simulator
ARP	Azimuth Reference Pulse
ASIS	Airport Surveillance Radar-9 Serial Interface system
ASR	Airport Surveillance Radar
ASSY	Assembly
AT	Air Traffic
ATCRBS	Air Traffic Control Radar Beacon System
AUI	Attachment Unit Interface
AUX	Auxiliary
AZ	Azimuth

B

BATT	Battery
BCE	Beacon Code Extractor

BITE	Built-in-Test-Equipment
BLDG	Building
BRKR	Breaker
BRKT	Bracket
BTD	Beacon Target Detector
BTM	Beacon/Search Target Merge
BTTG	Beacon Test Target Generator
BVQ	Beacon Video Quantizer

C

CAB	Tower Cab Interlock
CB	Circuit Breaker
CCA	Circuit Card Assembly
CDR	Continuous Data Recording/Recorder
CENRAP	Center Radar ARTS Processing
CGW	Communication Gateway
CH	Channel
C/I	Correlation and Interpolation
CLK	Clock
CLR	Clear
CMD	Command
COHO	Coherent Oscillator
COMB	Combiner
COMM	Communication(s)
CTRL	Control
CONV	Converter
CP	Circular Polarization
CPI	Coherent Processing Interval
CPLR	Coupler
CPU	Central Processing Unit
CSB	Carrier Plus Sideband
CSS	Computer Subsystem
CTRL	Control
CTS	Clear to Send
CW	Continuous Wave

D

D/A	Digital to Analog
DCD	Data Carrier Detect
DCDR	Decoder
DCE	Data Communications Equipment
DCON	Down Converter

DET	Detector
DIAG	Diagram
DIPLX	Diplexer
DLY	Delay
DME	Distance Measuring Equipment
DMUX	Digital Multiplexer
DNCONV	Down Converter
DUPLX	Duplex
DPS	Data Processing System
DPSK	Differential Phase Shift Keying
DSP	Digital Signal Processor
DSR	Data Set Ready
DTE	Data Terminal Equipment
DYSIM	Dynamic Simulation

E

ECG	En Route Communications Gateway
EMSD	Enhanced Mode-S Decoder
ENC	Encoder
ENV	Environmental
EQPT	Equipment
ERP	Effective Radiated Power
ERR	Error
ESD	Electrostatic Discharge
ETMS	Enhanced Traffic Management System
EXCTR	Exciter

F

FCPU	Facility Central Processing Unit
FDX	Full Duplex
FEA	Front End Assembly
FIFO	First-In, First-Out
FLT	Fault
FM	Fault Monitoring
FREQ	Frequency

G

GEN	Generator
GND	Ground
GPS	Global Positioning System
GPW	General Purpose Workstation

GRAM	Global Random Access Memory
GS	Glide Slope

H

HDD	Hard Disk Drive
HIST	History
HPA	High Power Amplifier
HV	High Voltage

I

IDENT	Identification
IF	Intermediate Frequency
ILLUM	Illuminate
INHB	Inhibit
INTERR	Interrogation
INTFC	Interface
I/O	Input/Output
ISG	Interrogation Signal Generator

J

J	Jack

K

KBD	Keyboard
KVM	Keyboard Video Mouse

L

LAN	Local Area Network
LBC	L-Band Converter
LCSU	Local Control Status Unit
LCU	Local Control Unit
LED	Light Emitting Diode
LLA	Low-Level Amplifier
LMPA	Low/Medium-Power Amplifier
LMT	Local Maintenance Terminal
LNK	Link
LO	Local Oscillator
LOC	Localizer
LOG	Logarithm

LP	Linear Polarization
LPA	Low Power Amplifier
LSB	Least Significant Bit
LVPS	Low Voltage Power Supply/Supplies

M

MAINT	Maintenance
MALF	Malfunction
MAX	Maximum
MDT	Maintenance Data Terminal
MEM	Memory
MFR	Manufacturer
MIN	Minimum
MON	Monitor
MSB	Most Significant Bit
MSDP	Multi-Sensor Data Processor
MSSR	Monopulse Secondary Surveillance Radar

N

NA	Nonapplicable/Not Applicable
NEG	Negative
NTS	Network Time Server
NUNIO	Network Universal Input/Output

O

No authorized abbreviations

P

PAM	Pulse Amplitude Modulation
PC	Personal Computer
PCI	Peripheral Component Interconnect/Interconnection
PCU	Power Conditioning Unit
PDU	Power Distribution Unit
PED	Pedestal
PFN	Pulse-Forming Network
PLL	Phase Lock(ed) Loop
PMDT	Portable Maintenance Data Terminal
PN	Part Number
POS	Positive
PPS	Pulse Per Second

PRETRIG	Pre-Trigger
PRI	Primary
PROC	Processor
PS	Power Supply
PSM	Power Supply Module
PWR	Power

Q

No authorized abbreviations

R

RAD	Radiate
RCSU	Remote Control and Status Unit
RCVR	Receiver
RD	Range Delay
RDP	Radar Data Processor
RDR	Radar
RDY	Ready
REF	Reference
REFLD	Reflected
REG	Regulator
REV	Revision
RF	Radio Frequency
RFSTC	Radio Frequency Sensitivity Time Curve
RFTTG	Radio Frequency Test Target Generator
RGB	Red, Green, Blue
RMS	Remote Maintenance Subsystem
RMT	Remote
RSCP	Radar Signal Control Processor
RSG	Remote Site Gateway
RT	Receive/Transmit
RTN	Return
RTS	Request to Send
RV	Radar Video
RVP	Radar Video Processor
RXD	Receive Data
RX	Receive

S

SATA	Serial Advanced Technology Attachment
SB	Sideband

SBO	Sideband Only
SCIP	Surveillance and Communications Interface Processor
SCU	System Control Unit
SEL	Select
SIL	Silence
SMR	Surface Movement Radar
SMRi	Surface Movement Radar-Improved
SMRR	Surface Movement Radar Raytheon
S/N	Serial Number
SS	Support Subsystem
SSS	Site Support Server
STALO	Stable Local Oscillator
STBY	Standby
STC	Sensitivity Time Control
SVGA	Super Video Graphics Array
S/W	Software
SW	Switch
SYNTH	Synthesizer
SYNC	Synchronizer
SYS	System Area

T

TDW	Tower Display Workstation
TEMP	Temperature
TGT	Target
TOY	Time of Year
TP	Test Point
TRIG	Trigger
TSP	Time Synchronization Pulse
TWT	Traveling Wave Tube
TX	Transmit
TXD	Transmit Data

U

UATR	Universal Access Transceiver Receiver
UPS	Uninterruptible Power Supply
USB	Universal Serial Bus
UTC	Coordinated Universal Time
UV	Undervoltage

V

VGA	Video Graphics Array
VID	Video
VME	Versa Module Eurocard/Europa
VOL	Volume
VOR	Very High-Frequency Omni-Directional Range
VS	Voice Switch
VSWR	Voltage Standing Wave Ratio

W

WAN	Wide Area Network
WG	Wave Guide
WSP	Weather System Processor
WX	Weather

X

XB	X-band
XBC	X-Band Converter
XCVR	Transceiver
XMTR	Transmitter

Y

No authorized abbreviations

Z

No authorized abbreviations